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The Coastal Plainer

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Message from the MO–Leader's Desk

By Charles Love, MO–15 Team Leader

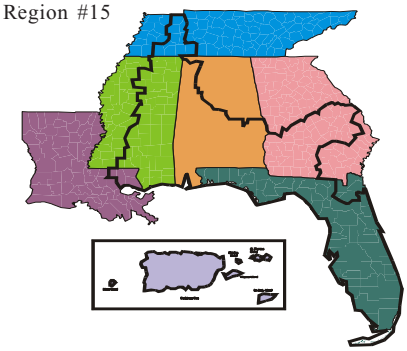
Again, greetings everyone!

This fiscal year has been very busy for our soil scientists at the field, state, and regional levels. I have been working with the State Soil Scientists developing plans for using work details to deploy soil scientists across the region. The work details are needed to complete initial soil survey mapping on schedule and to help with the deployment of geospatial workstations to the soil survey area offices.

We are going to do whatever it takes to compete the initial soil survey mapping of the region in the next 4 years. In the MO–15 area, about 3.5 million acres of non-Federal land and Native American land are left to map. This means we will need a great deal of help (out-of-state detailees) to complete this effort.

Lately, I have had the delightful experience of watching our personnel demonstrate various new technologies being used at the soil survey area offices in our region. The technologies include lidar elevation data, Digital Elevation Models (DEMs), and geospatial workstations. The soil scientists now using these technologies are convinced that they will expedite soil survey data collection, improve the quality of the spatial and tabular data for the Soil Data Mart, expand our understanding of soil-landscape functions, and increase our effectiveness. The confidence and skills shown in the use of these new technologies are increasing tremendously.

MLRA Soil Survey Region #15



A few weeks ago, I had the opportunity to sit down and talk with some of our cooperators, including health department representatives, university professors, soil consultants, and engineers. They are really pleased to be able to access soil data from the Soil Data Mart and the Web Soil Survey and are looking forward to the forth-coming upgrades to the Web Soil Survey. I was delighted to hear how our cooperators are helping us market the Web Soil Survey by providing training sessions, work-shops, etc.

Thank you for your support! ■

Charles

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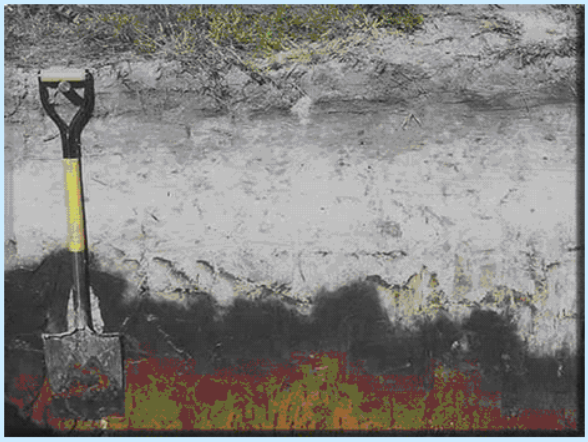
Osceola County

Deseret Ranch – Initial Mapping

188,000 acres



Deseret Ranch Mapping Project

The NRCS soil survey staff in Florida will soon begin initial mapping of the soils of the Deseret Ranch in Osceola County. At about 188,000 acres, the survey area is the largest privately owned, unmapped tract in Florida. The total land acreage of the entire Deseret Ranch is close to 300,000 acres and includes parts of Brevard, Orange, and Osceola Counties.

The Deseret Ranch is a multiple-use operation involving cattle, sod production, and forestland. Based on the number of cattle, the Deseret Ranch is the largest beef operation in the United States. Only the King Ranch in Texas is close. The Deseret Ranch is primarily a cow-calf operation. It runs about 44,000 head of cattle. The sod operation provides high quality lawn products to nearby urban areas, including Orlando. In addition to timber production, the forestry operation also maintains several hunting leases.

The ranch employs about 80 people in a wide range of jobs, including cowboys and engineers. Most of the employees live in scattered areas throughout the ranch. The ranch was purchased by the Church of the Latter Day Saints in 1950. Most, but not all, of the employees are of the Mormon faith. The ranch is among the largest taxpayers in Osceola County.

The ranch is a sprawling pastureland dotted with palm trees and oaks. Only a small section of the ranch (along the St. Johns River) is still thick with timber. The ranch

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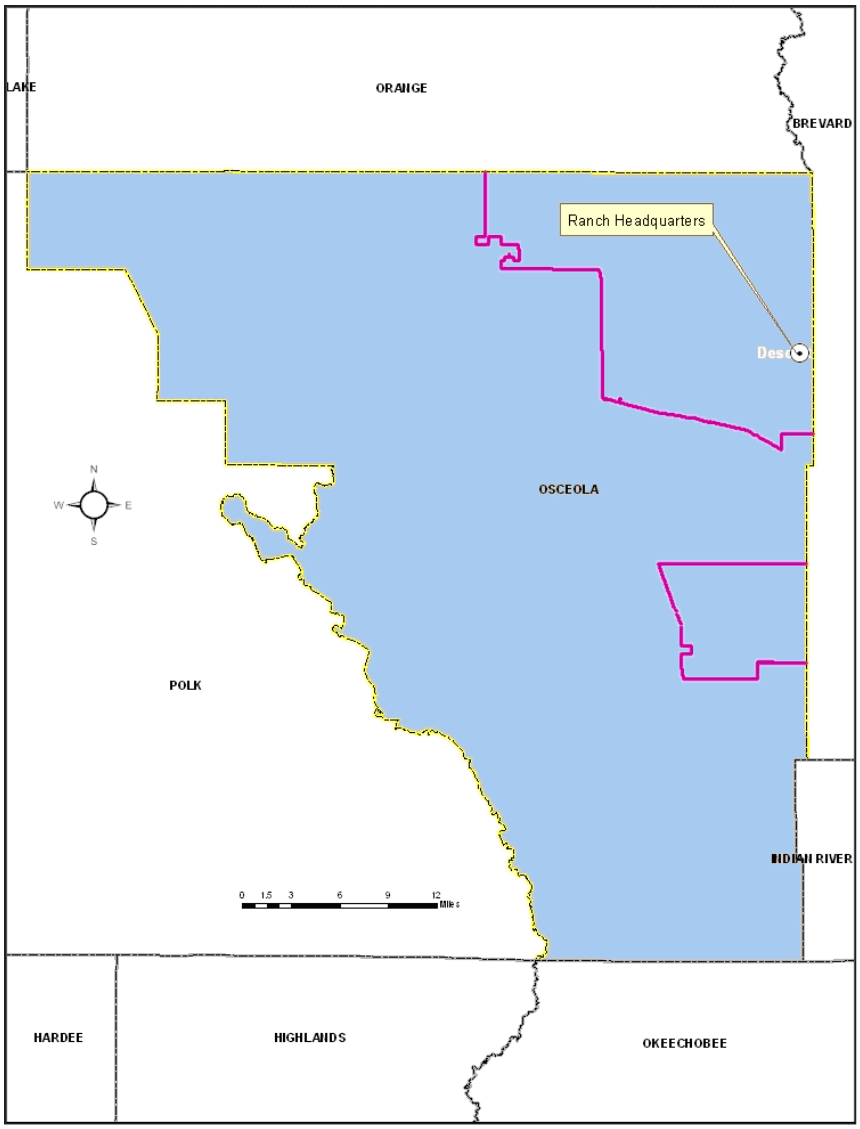

Location of Deseret Ranch in Osceola County, Florida.

Deseret Ranch, continued from page 2

is divided into 14 distinct management units. Each unit contains several thousand cows and calves.

The South Florida Flatwoods ecological community was originally the dominant ecological community within the ranch boundaries, and the Cypress Swamp and Cabbage Palm Hammocks communities were of minor extent. Extensive tracts, however, have been cleared and are now used as improved bahiagrass pasture.

The owners of the ranch have always embraced a legacy of stewardship while maintaining a low profile. The ranch is considered a model for large-scale stewardship utilizing environmentally sound management principles. The ranchers work closely with county, State, and Federal entities on diverse projects, such as controlling storm water runoff and discharge and maintaining one of the largest bird rookeries in the state.

The NRCS soil survey staff in Florida is looking forward to establishing a good working relationship with the owners and employees of the Deseret Ranch. ■

Soil Mapping and Digitizing Challenge

By Jerome Langlinais, MLRA Soil Survey Office Project Leader

The Tuscaloosa MLRA Soil Survey Office is continuing to make progress on its challenge to complete digital mapping for initial surveys, including 399,980 acres in Bibb County, Alabama, and 387,370 acres in Lamar County. The fieldwork for Bibb County is scheduled to be completed in fiscal year 2007. Lawrence McGhee and Sylvia Long will be finishing field activities and data collection. The Soil Survey of Lamar County is being done progressively. Jerome Langlinais and Stephon Thomas are presently mapping. They will be joined by D'andre Yancy on a three month work detail

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this late spring and early summer. Other MLRA staff members who have contributed but have since accepted other assignments are Chris Ford, Zamir Libohova, and Angela Warden.

A big part of the challenge is to not only complete the initial mapping assignments on the national deadline but to maintain the soil mapping and digitizing process so that a complete digital product can be made available shortly after fieldwork is completed. The digitizing efforts of the Tuscaloosa MLRA office have been benefiting from a process that was created in the North Alabama MLRA Office in Normal, Alabama, and tailored to meet the needs for initial soil surveys. In this process, the completed quads are transferred to mylar sheets with reference points included from topo maps and aerial photographs. The mylar sheets are scanned using a large-format sheet-fed scanner, or portions of the map are scanned using a flat-bed scanner. The scans are saved as TIFF files. The scanned quads are digitized by georeferencing the image to match the digital photo base for a near-perfect overlay and creating polygon coverage. Also, GIS software is used to generate layers for geology, elevation, slope gradient, slope curvature, and other landscape functions that aide with accurate placement of soil boundaries. This process allows for quality control of map units and has effectively and efficiently created a quality product. A tablet PC allows the layers to be checked for accuracy against GPS readings in the field. Later this year the process will benefit further from the use of lidar data for slope gradients and elevation models.

The progress of soil mapping and digitizing for the soil surveys of Bibb and Lamar Counties directly reflects the team efforts among all parties past and present. Members of the staff have been invaluable in developing the digitizing process for initial soil surveys and continue to share ideas for an efficient procedure. Like learning the soils with any other soil survey, you learn the best methods for using new technology at the end of the survey. ■

NRCS personnel and cooperators in Washington County, Alabama, describe a Porch soil, including the redoximorphic features associated with a seasonal high waster table.

Progress in Washington County

By Greg Brannon,
Soil Data Quality Specialist

The soil survey office in Washington County, Alabama, in conjunction with Auburn University, conducted characterization sampling in Washington County on the 22nd of March 2007. Participants included Dr. Joey Shaw, associate professor; Rick Smith and Matt Levi, graduate students; Julie Arriaga, soil

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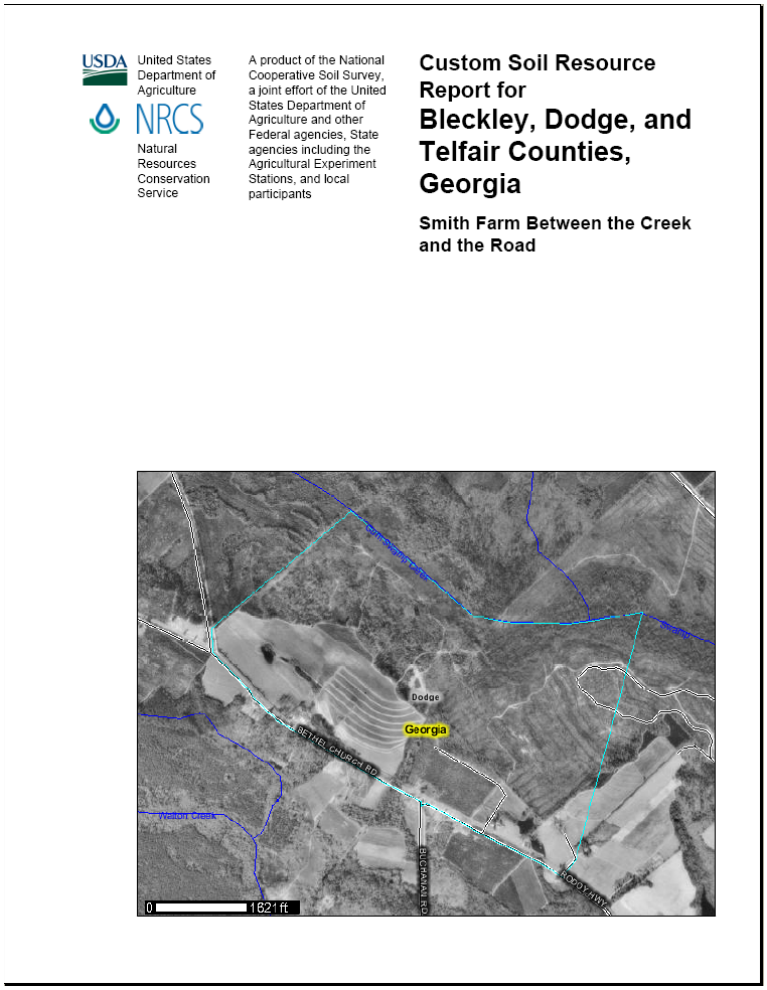
laboratory technician; Greg Brannon, soil data quality specialist; Sandy Page, soil survey project leader; and Joey Koptis, soil scientist.

The sampling was conducted in conjunction with research on monitoring and recording seasonal high saturation in Escambia and Poarch soils. The sampling also supports our efforts at collecting characterization data on benchmark soils. ■

A site that uses test wells to monitor the seasonal high water table in the Escambia Series.



Soil Survey Publications 2007

By Aaron Achen, Editor, MO–15

Prior to 2006, the primary method for delivering soil survey information was published, paper copies of soil survey reports. Hundreds to thousands of copies of the report for a survey area (typically an entire county) were printed and distributed free to the public. Starting last year, the paper copies were phased out. NRCS now delivers soil information primarily in electronic format. Complete reports for a survey area are delivered as a PDF file on CD and the Internet. Customized reports for user-selected areas are available on the Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/).

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This year, the use of electronic delivery is refined as the Web Soil Survey is upgraded, authors of soil surveys switch to digital imagery, and more archived surveys are made available online.

Web Soil Survey 2.0

A major revision to the Web Soil Survey is scheduled for late April. Although the revision will include dozens of changes, perhaps the most exciting is an option to create a "Custom Soil Resource Report" for an area of interest. The custom soil resource report will resemble the traditional soil survey report in many ways. It will provide a soil map, map unit descriptions, tables, and supporting text. Unlike a traditional report, however, the custom report will include only those elements requested by the user and only for those map units in the selected area of interest.

The custom soil resource report will be delivered in PDF so that it can be easily viewed onscreen or printed. The report will look familiar to anyone who has used a traditional survey. The custom report will include a cover, preface, table of contents, brief map unit descriptions, a soil map, and many optional elements. The optional elements include all of the tables currently available on the Web Soil Survey, descriptive text for the tables, thematic maps that show interpretations and properties of the soils, references, and a glossary. The custom soil resource report will not, however, include all of the information traditionally supplied in a soil survey report. The custom report will not include a general soil map, taxonomic unit descriptions, climate data, management statements in the map unit descriptions, or authored text, such as a description of the formation of the soils, geology, or general nature of the county.

Other scheduled improvements to the Web Soil Survey include the ability to navigate by the Public Land Survey System (range, township, and section); the ability to view the boundaries of certain Federal lands, such as National Parks and Forests; improved soil maps and thematic maps; and additional options for the user interface.

Illustrations

Soil survey project scientists are putting away their 35-millimeter cameras, boxing up their slides, filing away their prints, and getting out their digital cameras. Over the years, the quantity and quality of illustrations provided in soil surveys have evolved. In the first decade of the 20th century, surveys included line drawings, typically a single locator map. By the start of the Roaring Twenties, a small number of black-and-white pictures were added. Color pictures were used for soil profiles before Sputnik was launched. By the start of the 21st century, color pictures were used throughout the manuscript. One can only assume that videos will appear eventually. For now, however, the most recent development related to illustrations for soil surveys is the use of digital imagery.

The traditional paper copy of a soil survey report was printed on an offset press, which is used for large-scale printing. The reports included maps, text, tables, and illustrations. The illustrations included color photos, black-and-white photos, and line drawings. The illustrations were prepared in a manner designed specifically so that they could be reproduced on an offset press. The color photos were taken using slide film. The black-and-white photos were prints of a specific minimum size. The line drawings were publication-quality printouts developed in conjunction with illustrators at the National Cartographic and Geospatial Center (NCGC).

As of last year, most soil surveys are being printed only on a small scale. Instead of printing thousands of copies on an offset press, NRCS now makes a PDF file, prints 50

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copies on an electrostatic press, and enables users to print individual copies on their home or office printer. (An electrostatic press is much like a large office printer.) The changes to the way we are delivering surveys have required changes to the way we make surveys. For example, we are switching to digital cameras because we get better PDF files using digital pictures than using slides. Also, we are replacing black-and-white photos with color images because of the reduced printing costs.

In the future, we hope to include digital imagery with the map unit descriptions on the Web Soil Survey and to create a national photo gallery of soil-related images.

Scanning Soil Surveys

Near the end of fiscal-year 2006, the Soil Survey Division allotted funds to begin a large-scale project to transfer published soil surveys into electronic format. If funding continues, all published soil surveys—going back over 100 years—could eventually be available over the Web.

Over the last few years, dozens of published surveys have been scanned and distributed on CD as historical replicas. Many of the historical replicas are also available on the Website of the Soil Survey Division at http://soils.usda.gov/survey/online_surveys/. The new project calls for approximately 650 surveys to be scanned in fiscal-year 2007 and for at least 75 to be converted to PDF and made available online.

Historical replicas are most popular in survey areas where the supply of printed surveys has been exhausted. In these areas, the historical replica serves as an inexpensive reprint. Historical replicas also serve as a valuable historical archive and provide another avenue for providing soils information to the public.

Previously, historical replicas were produced by the MLRA Offices, State Offices, and the NCGC. For the new project, a private business has been contracted to scan the surveys and students have been hired to convert the raw scans to PDF documents. The business uses the latest technology and techniques to efficiently scan the source documents. The scanning is done in accordance with standards developed by the National Soil Survey Center and MO–15. The National Geospatial Development Center in West Virginia is administering the project. It oversees and trains student interns from West Virginia University. The PDF files are forwarded to the appropriate MLRA Office or State Office for a quality check and are posted to the Soil Survey Division Website. ■

Editor's Note

Issues of this newsletter are available on the Internet on the MO–15 homepage (http://www.mo15.nrcs.usda.gov/). Click on "News" and then on "The Coastal Plainer." You are invited to submit stories for future issues to Aaron Achen, editor, MO–15.

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